

Insects and Related Pests of House Plants



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This bulletin tells how to recognize and control the most common insects and related pests that attack plants in homes and home greenhouses throughout the United States. It has been prepared to answer the thousands of requests for information that come to the Department of Agriculture every year from housewives and home greenhouse operators. Foliage and flowering plants have become a decorative feature in millions of homes. Commercial growing of these plants is an important segment of the florist industry.

The insecticides recommended are those that are generally available and legally registered for use on indoor plants by the Environmental Protection Agency.

If your insect problem goes beyond the scope of this discussion, you can get additional help from your county agricultural agent, the agricultural college or department of agriculture in your State, or the U.S. Department of Agriculture.

When you write for information, send specimens of the pests in a small bottle of rubbing alcohol well packed to prevent breakage.

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INSECTS and RELATED PESTS of HOUSE PLANTS . . . How To Control Them

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CONTROL STRATEGIES

There are a number of methods for controlling insects or related pests of house plants, some utilizing pesticides, some consisting of non-pesticidal alternatives. What the homeowner should use varies with the pest encountered, the number of plants infested, the size of the infestation, and the personal inclination of the homeowner.

Preventing infestation.—Examine cut flowers and new plants brought into the home to be sure they are free of pests. It's a good idea to isolate new plants for at least a month before you place them with other plants. During this time you can watch the new plants and discover any infestations that develop.

Using sterilized soil for potting may prevent the development of infestations of such soil pests as

springtails, psocids, and earthworms.

Washing.—Washing with soapy water and a soft brush or cloth may be all that is needed to remove aphids, mealybugs, and scale insects from broad-leaved plants. Use 2 teaspoons of a mild detergent to a gallon of water.

Handpicking.—If one or a few plants are involved, you may be able to control aphids and mealybugs by removing them with a toothpick or tweezers. Caterpillars may be picked off plants by hand and destroyed. Cutworms, slugs, and snails may be found in their hiding places during the daytime and destroyed, or picked from the plants at night when they feed.

Use of alcohol.—An easy way to control a light infestation of mealybugs or aphids on one or two plants is to wet and remove the insects with a swab that has been dipped in alcohol. Use a swab made from a small

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PN-5831

Spraying a broad-leaved plant with lukewarm water—one way to remove aphids, mealybugs, thrips, and spider mites.

thin stick and a tuft of cotton to dip in rubbing alcohol.

Pressurized insecticide spray.—

Relatively few insecticides have been registered by the Environmental Protection Agency for use on plants within the home. Those products that have been cleared, often consisting of several active ingredients in combination, are usually specially formulated for this use. Such ready-to-use spray preparations for plants come in pressurized cans with pushbutton sprayer tops. These preparations are available in department, hardware, and garden-supply stores.

When buying a pushbutton spray, read the label on the con-



PN-5832

Swabbing with a small stick and tuft of cotton dipped in rubbing alcohol as a way of controlling mealybugs or aphids.

tainer to be sure the spray is one that can be used safely on plants. Some insecticide sprays in push-button cans, which are made for uses other than spraying plants, contain oils or other materials that will kill plants or burn foliage.

Pushbutton plant sprays contain small quantities of rotenone, pyrethrins, or other killing agents. They may be used to kill pests that can be hit readily with the spray, such as aphids and whitefly adults on plants, or whitefly and fungus gnat adults swarming near the plants.

To apply, follow the directions on the container.

CONTROL

The pesticides mentioned in this publication are available in several different formulations that contain varying amounts of the active ingredient. Because of differences in active ingredient, dosage rates are not indicated in this publication.

The user is cautioned to read and follow all directions and precautions given on the label of the pesticide formulation that will be used.

INSECTS AND RELATED PESTS

Ants

Description.—Several species can be troublesome on plants in the home or home greenhouse. Ants are $\frac{1}{16}$ to $\frac{1}{2}$ inch long; are black, brown, yellow, or red; and have small necks and waists. They live in nests as colonies—beneath walks or in flowerbeds of home greenhouses or in window boxes.

Damage.—Ants of certain species dig up and carry away newly planted seeds or small seedlings. Plant roots may be injured by the burrowing activities of ants.

Ants of some species are attracted to plants by certain aphids, mealybugs, and scale insects that excrete honeydew. The ants feed on this sweetish, sticky liquid.

What to do.—When ants are associated with aphids, mealybugs, or scale insects, apply control measures for these pests (see pp. 8 and 9). If ants continue to be a problem,

treat infested areas with propoxur or some other material registered for the control of ants in household situations in a manner consistent with directions on the label.

Aphids

Description.—Several species are pests of house plants. Common aphids are $\frac{1}{16}$ to $\frac{1}{8}$ inch long; are green, pink, red, or black; and have soft rounded or pear-shaped bodies with long legs and antennae.

In each species there are usually both winged and wingless forms, but the wingless form generally is more numerous. The wings are commonly held rooflike when at rest. Some aphids appear powdery because of a waxy covering.

Typically, aphids cluster on the undersides of leaves or on young, tender leaves and stems or flowerbuds. Some kinds feed on the roots.

Damage.—Aphids feed by sucking out the plant juices; this feeding causes poor growth, stunted plants, or curled and distorted leaves. Aphids excrete a sweetish, sticky liquid called honeydew. Honeydew of most species is attractive to ants; it imparts a shiny appearance to the foliage and provides a base for the growth of sooty mold.

What to do.—Obtain a commercially prepared pressurized pesticide pushbutton spray mixture, making sure that it lists both “houseplants” and “aphids” on its label, and use following the directions on the can.

When one or a few plants are infested, handpicking, washing, or using alcohol (p. 3) may be a practical way to control aphids.

Cutworms and Other Caterpillars

Description.—Several species can be troublesome in the home greenhouse. Cutworms and other caterpillars are barely visible to the naked eye when they hatch, but some reach a length of about 1½ to 2 inches when fully grown.

Some species are a solid color, some are striped lengthwise or crosswise, and others are mottled. Colors in shades of green or brown are common for some species, but various combinations of brown, red, yellow, green, gray, and black are also found. A few kinds of caterpillars are covered with dense hair.

Cutworms are difficult to find because they usually hide in the soil or deep in the flowers during daytime. Cutworms and some other

caterpillars develop from eggs laid by night-flying moths that enter the open ventilators in greenhouses.

Damage.—Leaves, buds, or flowers may be entirely or partly eaten. Some worms cut off young plants near the soil level, or the branches or flowers of larger plants. Dark pellets of excrement may be left on the plant.

What to do.—Handpicking (p. 3) is often adequate for control of cutworms and other caterpillars.

If handpicking is not practical, obtain a “houseplant” or “house and garden” pressurized spray listing “caterpillars” as one of the insects controlled, and use according to labeled directions.

Cyclamen Mites

Description.—Adult mites are too small to be seen with the naked eye. Under a magnifying glass the adults are seen as oval, amber or tan-colored, semitransparent, glistening mites. The young are even smaller and milky white. The eggs are oval and pearly white.

Mites are found mostly in protected places on young tender leaves, young stem ends, buds, and flowers. They crawl from plant to plant where leaves touch; another means of spread is transfer of mites on hands or clothing.

Damage.—Leaves of infested plants are twisted, curled, and brittle. Buds may be deformed and fail to open. Flowers are deformed and often streaked with darker color. Blackening of injured leaves, buds, and flowers is common.

Infested ivy will produce stems



PN-5833

Cyclamen mite injury to crown of African violet.

without leaves or with small deformed leaves. Infested African violets develop small, twisted, hairy leaves that may soon die.

What to do.—Trim off badly injured plant parts where practicable. Immerse infested plants, pot and all, for 15 minutes in water held at 110° F. Success of this treatment depends on careful control of the water temperature.

In home greenhouses you can also control the mites by making two or three applications of dicofol spray at 10-day intervals.

False Spider Mites

Description.—A few species can infest plants in the house or home

greenhouse. These are flat, oval, dark-red mites too small to be easily seen with the naked eye. The young and eggs are bright red. All stages of false spider mites are found mostly on the undersides of leaves, generally along the veins or other irregularities on the leaves.

Damage.—Feeding by these mites causes finely stippled bronze or rusty-brown areas along veins or on entire leaves. Edges of infested leaves may die, or the leaves lose some color and drop off. Infested plants are weakened.

What to do.—In home greenhouses, mites can be controlled by making two or three applications of dicofol spray at 10-day intervals.

Fungus Gnats

Description.—Adult fungus gnats are delicate, gray or dark-gray, fly-like insects about $\frac{1}{8}$ inch long. They are attracted to light and when present in the house swarm over the windows. The immature forms, which live in soil, are whitish maggots, and attain a length of about $\frac{1}{4}$ inch. Maggots are likely to be found in soils with quantities of decaying vegetable matter.

Damage.—The maggots cause injury to the root systems by burrowing in the soil. They may feed on the roots and crowns of plants. Severely injured plants make little growth, appear off color, and may drop foliage. Adult fungus gnats do no damage but are a nuisance.

What to do.—For the control of the maggots in home greenhouses, avoid overwatering the plants.



PN-5835

One species of mealybug on coleus.

Mealybugs

Description.—Several species are common pests of house plants. Mealybugs are softbodied, appear as though dusted with flour because of their waxy covering. They grow to be about $\frac{3}{16}$ inch long. Some species have waxy filaments extending from the rear of the body. Mealybugs are found at rest or crawling slowly on stems, where stems and leaves join, and on leaves (especially along veins on undersurfaces). Their eggs are laid in clusters enclosed in white waxy, cottony or fuzzy material. Mealybugs are sometimes attended by ants. The ground mealybug, a soil

inhabitant, feeds on the roots of African violets and other plants.

Damage.—Mealybugs suck out the plant juices, thus stunting or killing the plants. Sooty mold grows on the honeydew excreted by some species of mealybugs. The ground mealybug damages the rootlets, causing the plants to grow slowly and to wilt between waterings.

If one or a few plants are infested you may be able to control mealybugs by washing, by hand-picking, or by using alcohol (p. 3). Isolate treated plants to avoid reinfestation.

Millipedes



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Description.—Several species may become numerous in the home greenhouse. Millipedes grow to a length of about $1\frac{1}{2}$ inches. They are wormlike creatures with many short legs along the body. The hard bodies are brown, tan, or gray.

Millipedes are found under boards or flowerpots or in other sheltered areas; they are likely to be most numerous in moist places where there is plenty of organic material. They are most active at night and tend to assume a coil form when disturbed.

Damage.—Millipedes may feed on seeds, roots, tubers, bulbs, or fleshy stems of plants, but mostly they eat decaying organic material. They become a nuisance when present in large numbers.

What to do.—Eliminate hiding places and excessive organic materials where possible.

Drench the soil surface and hiding places of millipedes with malathion spray.

Psocids

Description.—Psocids have soft oval bodies, grow to about $\frac{1}{32}$ to $\frac{1}{16}$ inch long, and are pale yellowish white to gray. Some species have wings and others are wingless. Sometimes psocids cluster in numbers of a hundred or more. They

feed on dead animal or vegetable matter, lichens, and fungi.

Psocids may occur in large numbers in the soil or on pots and benches, especially in undisturbed locations in the home greenhouse. Minute, quick-moving psocids are often found on old books and papers stored in damp places.

Damage.—Psocids may be found on living plants, but, so far as known, do not feed on them. When present in large numbers, psocids are a nuisance.

What to do.—Control measures are unnecessary.

Scales

Description.—Several species are common on plants in the home or home greenhouse. Scale insects have a shell-like covering, or scale, that protects the entire body. Most species are about $\frac{1}{16}$ to $\frac{1}{8}$ inch in diameter, but a few species are about 4 times larger. Some are hemispherical in shape, some oval, and some are shaped like an oystershell. Colors range from white to black, but browns and grays predominate.

Some species lay eggs in a whitish sac secreted from under the scale; these can be mistaken for mealybugs if not examined closely for the presence of the shell-like covering. Some kinds of scales infest the leaves of plants, others are found both on stems and leaves, and still others attack chiefly the stems.

Damage.—Scale insects obtain food by sucking the plant juices; this feeding causes poor growth or stunted plants. These insects ex-



PN-5836

Hemispherical scale on fern.

crete droplets of a sweetish, sticky liquid called honeydew; honeydew of most species is attractive to ants. It imparts a shiny appearance to the foliage and provides a base for the growth of sooty mold.

What to do.—If only one or a few plants are infected, washing with soapy water may be a practical way to control scale insects. Heavily infested plants should be discarded.

Slugs and Snails

Description.—Several species can be troublesome in the home greenhouse. Both snails and slugs have fleshy, soft, slimy, legless bodies that range in color from whitish yellow to black; most are mottled with shades of gray. These pests are

slow moving and grow to lengths of about $\frac{1}{2}$ inch to 4 inches.

Snails have a hard spiral shell on the back. Shells range from about $\frac{1}{4}$ to 1 inch in diameter, and are off-white to brown or black in color.

Slugs and snails normally hide during the day under pieces of wood or pottery, fallen leaves, or mulches and are active at night, but they may be active on damp, dark days.

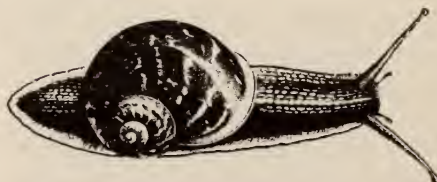
Damage.—Slugs and snails feed on the leaves, flowers, stems, or roots of plants by scraping off the tissue or eating holes in the leaves or flowers. They leave a glistening trail of slime wherever they crawl.

What to do.—Insofar as practicable, eliminate hiding places. Put out a few pieces of shingles or boards for traps. Collect and destroy trapped slugs and snails every day or two; look for them also under the pots and under the pot rims. Collect slugs and snails from the plants at night.

If further control measures are needed, use a commercially prepared slug and snail bait containing



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metaldehyde or methiocarb. Apply it as directed on the container. To make the bait more attractive to the pests, you may moisten it with beer.

You can partially control snails and slugs if you place shallow dishes of beer in the vicinity of infested plants. Some species will crawl into the beer and drown. The dishes should have straight sides to make it easier for the snails and slugs to crawl in.

Sowbugs and Pillbugs

Description.—Several species can be troublesome in the home greenhouse. Sowbugs and pillbugs have segmented, shell-like bodies. They are oval, $\frac{1}{4}$ to $\frac{1}{2}$ inch long, and gray to brown.

Sowbugs and pillbugs are commonly found in places with high humidity. They are most active at night and usually hide in loose soil or under any convenient cover during the day. When disturbed, pillbugs roll up in a ball, and sowbugs scurry for cover.

Damage.—Sowbugs and pillbugs usually feed on decaying organic materials but sometimes eat

roots and tender plant parts, especially those of bedding plants and seedlings.

What to do.—Eliminate hiding places where possible.

Spray soil surface, under boardwalks and benches, along foundations, or other infested areas with malathion.

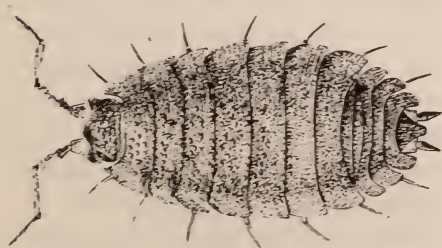
Spider Mites (Red Spiders)

Description.—Several species are common pests of house plants. They are most abundant when conditions are dry and warm. These tiny, oval, greenish, yellowish, or reddish mites are barely visible to the naked eye. They are found first on the undersurfaces of leaves; when numerous, they spread to other parts of the plant.

If infestation is heavy, spider mites form a frail, silky webbing that stretches from leaf to leaf to cover the plant. Mites can be seen as they crawl over this webbing.

Damage.—Spider mites injure plants by feeding on the plant juices. Injury is first visible as whitish or yellowish speckled areas on the top surfaces of leaves. As feeding progresses, the leaves take on a bronzed or yellowed appearance and may die or drop from the plant. Heavily infested plants become stunted and may die. Flowers may be faded.

What to do.—Syringe tough plants with a forceful spray of water to break up webbing and dislodge spider mites. Dip or spray plants, using malathion or dicofol,



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Sowbug

within 2 days after syringing. Treat tender plants with malathion or dicofol.

Be sure to wet the undersides of leaves.

Several applications at weekly intervals will be required to control spider mites.

Springtails

Description.—Several species can be troublesome in the soil in flowerpots and home greenhouses. Springtails range in size from microscopic to about $\frac{1}{5}$ inch long. Some species have slender, segmented bodies, others have globular bodies without distinct segmentation. They are whitish to blackish; some are tinted blue or purple.

Springtails sometimes become plentiful in moist situations where there is much organic material; large numbers of them can then be seen on the surface of the soil. Mostly they feed on decaying matter.

Damage.—Springtails may chew on seedlings or on tender parts of plants, particularly the parts near ground level. They are a nuisance when numerous.

What to do.—Spray soil surface, pots, saucers, shelves, and affected parts of plants with malathion.

Thrips

Description.—Several species may infest house plants. Thrips are slender, barely visible to the naked

eye. Adults may be tan, brown, blackish brown, or black, with lighter marking. The young are whitish to yellow or orange, and some species carry droplets of black excrement on their backs. The adults fly or leap away, or run rapidly about on the plant when disturbed. The young are less active.

Damage.—Both adults and young cause plant injury, most commonly on the leaves or flowers, by sucking out the plant juices. Typical injury appears as irregular or streaked silvered areas that are speckled with little black dots of excrement. Foliage may blotch or drop, and flowers may be streaked or distorted.

What to do.—Obtain a commercially prepared pressurized pesticide pushbutton spray mixture, making sure that it lists both “house plants” and “thrips” on its label, and use following the directions on the can.

Whiteflies

Description.—A few species can be troublesome; one of these is an important pest of house plants. The adults are about $\frac{1}{16}$ inch long, and have white, wedge-shaped wings. When infested plants are moved, the adults take flight; they resemble small snowflakes or bits of paper ash swirling in the air.

The scalelike young are mostly pale green to yellow or whitish, oval in outline, and flat on top. Except

for newly hatched young, the immature stages are attached to the leaves, mostly on the undersurfaces.

Damage.—Both adults and young feed on the leaves of plants by sucking out the juices. Infested leaves become pale, turn yellow, and die or drop off. Surfaces of leaves become covered with sticky honeydew excreted by the insects. Sooty mold develops on the honeydew.

What to do.—Spray plants, using

a malathion, rotenone, and pyrethrin aerosol combination. Wet the underside of the foliage. Several applications at weekly intervals may be required to control whiteflies. The synthetic pyrethroid resmethrin is effective and available for the home greenhouse for use as a spray or aerosol, or for homeowner use on house plants as a commercial pushbutton pressurized spray.

Federal and State regulations require registration numbers on all pesticide containers. Use only pesticides that carry this designation. Read and follow all directions on the label.

USDA publications that contain suggestions for the use of pesticides are normally revised at 2-year intervals. If your copy is more than 2 years old, contact your Cooperative State Extension Service to de-

termine the latest pesticide recommendations.

The pesticides mentioned in this publication were federally registered for the use indicated as of the issue date of this publication. Because the registration of a pesticide that you have had in your possession for some time can be changed, you may wish to check with your local agricultural authorities to determine the registration status of the pesticide.

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